

TOXIC SHOCK SYNDROME

I. IDENTIFICATION

A. CLINICAL CASE DEFINITION:

1. For Toxic Shock Syndrome (except Streptococcal Toxic Shock Syndrome)

An illness with ALL the following clinical manifestations:

- Fever with temperature $\geq 38.9^{\circ}\text{C}$ (102°F).
- Rash - diffuse macular erythroderma.
- Desquamation - one to two weeks after onset of illness, particularly palms and soles.
- Hypotension - systolic blood pressure ≤ 90 mm Hg for adults or less than fifth percentile by age for children < 16 years of age; orthostatic drop in diastolic blood pressure ≥ 15 mm Hg from lying to sitting, orthostatic syncope, or orthostatic dizziness, **AND**
- Multisystem involvement - three or more of the following:
 - **Gastrointestinal:** vomiting or diarrhea at onset of illness.
 - **Muscular:** severe myalgia or creatine phosphokinase level at least twice the upper limit of normal for laboratory.
 - **Mucous membrane:** vaginal, oropharyngeal, or conjunctival hyperemia.
 - **Renal:** blood urea nitrogen or creatine at least twice the upper limit for normal for laboratory or urinary sediment with pyuria (≥ 5 leukocytes per high-power field) in the absence of urinary tract infection.
 - **Hepatic:** total bilirubin, serum glutamic - oxaloacetic transaminase (SGOT), or serum glutamic-pyruvic transaminase (SGPT) at least twice the upper limit of normal for laboratory.
 - **Hematologic:** platelets $< 100,00/\text{mm}^3$
 - **Central Nervous System:** disorientation or alterations in consciousness without focal neurologic signs when fever and hypotension are absent, **AND**
- Negative results on the following tests, if obtained:
 - Blood, throat or cerebrospinal fluid cultures (blood culture may be positive for *Staphylococcus aureus*).
 - Rise in titer to Rocky Mountain spotted fever, leptospirosis, or measles.

2. For Streptococcal Toxic Shock Syndrome

An illness with the following clinical manifestations occurring within the first 48 hours of hospitalization or, for a nosocomial case, within the first 48 hours of illness:

- Hypotension defined by a systolic blood pressure < 90 mm Hg for adults or less than the fifth percentile by age for children aged < 16 years
- Multi-organ involvement characterized by two or more of the following:
 - **Renal impairment:** Creatinine ≥ 2 mg/dl ($177\text{ }\mu\text{mol/L}$) for adults or greater than or equal to twice the upper limit of normal age. In patients with preexisting renal

disease, a greater than twofold elevation over the baseline level.

- **Coagulopathy:** Platelets $100,00/\text{mm}^3$ ($100 \times 10^6/\text{L}$) or disseminated intravascular coagulation, defined by prolonged clotting times, low fibrinogen level, and the presence of fibrin degradation products
- **Liver involvement:** Alanine aminotransferase, aspartate aminotransferase, or total bilirubin levels greater than or equal to twice the upper limit of normal for the patient's age. In patients with preexisting liver disease, a greater than twofold increase over the baseline level
- **Acute respiratory distress syndrome:** defined by acute onset of diffuse pulmonary infiltrates and hypoxemia in the absence of cardiac failure or by evidence of diffuse capillary leak manifested by acute onset of generalized edema, or pleural or peritoneal effusions with hypoalbuminemia
- A generalized erythematous macular rash that may desquamate
- Soft-tissue necrosis, including necrotizing fasciitis or myositis, or gangrene
- Isolation of group A Streptococcus

B. REPORTING CRITERIA: Clinical diagnosis.

C. KENTUCKY CASE DEFINITION:

1. (Except for streptococcal toxic-shock syndrome) A patient with an illness compatible with all six clinical findings described above, including desquamation, unless the patient dies before desquamation could occur.
2. For streptococcal toxic-shock syndrome, the criteria in I. A. 2.

II. ACTIONS REQUIRED / PREVENTION MEASURES

A. KENTUCKY DISEASE SURVEILLANCE REQUIRES URGENT NOTIFICATION: REPORT TO THE LOCAL OR STATE HEALTH DEPARTMENT IMMEDIATELY upon identification of a case or suspected case in a time period not greater than 24 hours. If health department personnel cannot be contacted directly, notification shall be made by electronic submission or by telephone to the emergency number of the Division of Epidemiology and Health Planning: **1-888-973-7678**.

B. EPIDEMIOLOGY REPORTS REQUESTED:

1. Kentucky Reportable Disease Form – EPID 200 – (Rev. Jan/03).
2. Toxic-Shock Syndrome Case Report - CDC 52.3 Rev 4-96.
3. For Streptococcal toxic-shock syndrome the Group A Streptococcus Surveillance report information is needed to complete the case definition, (i.e., fasciitis/myositis, disseminated intravascular coagulation and adult respiratory distress syndrome).

C. PUBLIC HEALTH INTERVENTIONS:

- Cluster investigation if more than one case occurs in close geographic and temporal proximity.
- Newly identified risk factors include use of contraceptive diaphragms and vaginal contraceptive sponges, and infection following childbirth or abortion.
- Educate health care community regarding specific elements of clinical case definition that must be met for a case to be reportable at the state and national level.

III. CONTACTS FOR CONSULTATION

- A. KENTUCKY DEPARTMENT FOR PUBLIC HEALTH, COMMUNICABLE DISEASE BRANCH: 502-564-3261.
- B. KENTUCKY DEPARTMENT FOR PUBLIC HEALTH, SURVEILLANCE AND HEALTH DATA BRANCH: 502-564-3418.

IV. RELATED REFERENCES

1. Chin, James, ed. TOXIC SHOCK SYNDROME. In: Control of Communicable Diseases Manual. 17th ed. Washington, DC: American Public Health Association, 2000: 469-470.
2. Pickering, LK, ed. Toxic Shock Syndrome. In: 2000 Red Book: Report of the Committee on Infectious Diseases. 25th ed. Elk Grove Village, IL: American Academy of Pediatrics, 2000: 576-581.